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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,758	03/31/2004	Gansha Wu	ITL.1097US (P18492)	7739
21906	7590	11/23/2007	EXAMINER	
TROP PRUNER & HU, PC 1616 S. VOSS ROAD, SUITE 750 HOUSTON, TX 77057-2631			WEI, ZHENG	
			ART UNIT	PAPER NUMBER
			2192	
			MAIL DATE	DELIVERY MODE
			11/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/814,758

Applicant(s)

WU ET AL.

Examiner

Zheng Wei

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

Claims 21-30

Claims 21-30 are computer program products/article version of the claimed method, wherein all claimed limitation functions have been addressed in claims 1-10 above respectively. It is well known in the computer art that such method steps can be implemented as computer program and can be practiced and /or stored on a computer operable media. Thus, they also would have been obvious in view of reference teachings above.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's arguments with respect to claims rejection have been considered but are moot and the rejection of the claims over prior art in the previous Office action is maintained in light of the necessitated additional clarifications provide hereon. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory

DETAILED ACTION

Remarks

1. This office action is in response to the amendment filed on 09/10/2007.
2. Claims 10, 14, 20 and 30 have been amended
3. The objection to the drawing is withdrawn in view of applicant submitted replacement sheet.
4. The 35 U.S.C. 112 second paragraph rejection to claims 10, 14-17, 20 and 30 are withdrawn in view of the Applicant's amendment.
5. Claims 1-30 remain pending and have been examined.

Response to Arguments

6. Applicant's arguments filed on 09/10/2007, on page 8, have been fully considered but they are not persuasive. For example:
 - At page 8, line 4 and lines 6-7, the Applicant argues that Shaylor does not seem to have anything to do with querying metadata and moreover, there is no limiting a search scope within a local memory sub-region. However, the examiner respectfully disagrees. As to previous Office Action, paper number 5, Examiner pointed out at Figure 3, step 306 "Invoke Byte Code – Might Require Constant Pool Lookup", Shaylor discloses a step about lookup constant pool and its related text/Figure further discloses the feature about looking up/querying/retrieving metadata(the contents of the entry in the

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constant pool) (see for example, Figures 6A6B/6C and related text; also see col.9, lines 25-26, "In order to resolve the entry, the contents of the ninth entry is first retrieved"). Moreover, the step of looking up constant pool itself also indicates that the querying/retrieving is processed in the constant pool which is sub-region of local memory (within the memory) (see for example, TABLE 1, "constant pool pointer"). Therefore, the Examiner reasserted that Shaylor, indeed, disclosed the claimed limitation as set forth in the previous Office Action.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-3 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Shaylor (Shaylor et al., US 6,446, 084)

Claim 1:

Shaylor discloses a method comprising:

- receiving a code address (current IP- instruction pointer) (see for example, Fig.3, step 302 Retrieve Byte Code From Current IP and related text; also see col.3, lines 9-23)
- querying method metadata for said code address by limiting a search scope within a local memory sub-region of said code address (constant pool) (see for example, Fig.3, step 306 "Invoke Byte Code –Might Require Constant Pool Lookup" and related text; also see col.5, lines 9-23; further see Fig.6A-C and related text).

Claim 2:

Shaylor also discloses the method of claim 1, further comprising:

- partitioning a global method lookup table into smaller and distributed versions for said local memory sub-region (see for example, Fig.2 item 216 "Method Table", item 220 "Filed Table" and related text).

Claim 3:

Shaylor also discloses the method of claim 2, further comprising:

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- maintaining a limited set of methods for which codes are allocated within said local memory sub-region for said smaller and distributed version of the global method lookup table (see for example, Fig.2 item 216 "Method Table" and related text; also see col.4, lines 35-39).

Claim 8:

Shaylor discloses the method of claim 1, further comprising:

- maintaining allocation bits (method pointer) with each bit mapped to a legal object address (actual bytecodes) in heap space (see for example, col.4, lines 35-39); and
- using said allocation bits to identify a code object that encloses an arbitrary code address (see for example, col.6, lines 19-21, "Finally, the system returns this method pointer; also see Table 1, code example for detail implementation).

Claim 9:

Shaylor also discloses the method of claim 8, further comprising:

- partitioning the allocation bits into subsets for individual memory blocks (see for example, Fig.2, item 216 "Method Table", item 220 "Field Table" and related text).

Claim 10:

Shaylor also discloses the method of claim 9, further comprising:

- receiving an instruction pointer pointing into some internal address of the code (see for example, Fig.3, step 302 "Retrieve Byte Code From Current IP); and
- locating said code object based on said instruction pointer (see for example, col.5, lines 12-15, "virtual machine 116 first retrieves a byte code from the current instruction pointer (IP)...").

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 4-7, 11-30 rejected under 35 U.S.C. 103(a) as being unpatentable over Shaylor (Shaylor et al., US 6,446, 084).

Claim 4:

Shaylor discloses the method of claim 1, further comprising:

- providing a continuous space to a memory block to locate method metadata (see for example, Fig.2, item 216 "Method Table and related text); and

- placing block information (constant pool) regarding said memory block (see for example, Fig.2, item 206 "Constant Pool" and related text; also see col.6, lines 9-21)

But does not explicitly disclose placing block information at a beginning of the continuous space. However, it is well known in the computer art that putting two related memory blocks together can save time for memory access from one memory block to another by reducing the pointer jump distance. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to put block information at the beginning of the memory block to save memory access time and further improve the lookup efficiency.

Claim 5:

Shaylor discloses the method of claim 4 above, Shaylor further discloses the method comprising:

- providing a pointer (class pointer) to a distributed method lookup table from said block information (see for example, col.6, lines 8-21, "The system uses the class pointer, the method name and the type information to lookup a method pointer in method table).

Claim 6:

Shaylor further discloses the method of claim 5, wherein table entries of said distributed method lookup table represent code objects created in said memory block (see for example, fig.2, item 218 "Bytecode" and related text: also see col.4, lines 35-29, "This includes bytecode 218, which includes a string of bytes to be executed by virtual machine...").

Claim 7:

Shaylor also discloses the method of claim 5, further comprising:

- providing a virtual machine (see for example, col.4, lines 35-29, "This includes bytecode 218, which includes a string of bytes to be executed by virtual machine..."); and
- providing a garbage collector for said virtual machine to maintain said distributed method lookup table (see for example, col.5, lines 4-8, "In particular, the garbage collector must be informed of the possible pointers in the constant pool").

Claims 11-20:

Claims 11-20 are system version for performing the claimed method as in claims 1-10 addressed above, wherein all claimed limitation functions have been addressed and/or set forth above and certainly a computer system would need to run and/or practice such function steps disclosed by reference above. Thus, they also would have been obvious.

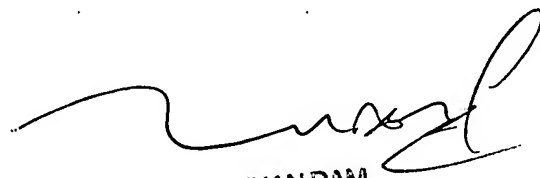
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action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zheng Wei whose telephone number is (571) 270-1059 and Fax number is (571) 270-2059. The examiner can normally be reached on Monday-Thursday 8:00-15:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571- 272-1000.



TUAN DAM
SUPERVISORY PATENT EXAMINER